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SEQUENCE LISTING

<110> Jennifer Ott Reilly <120> Neuroprotective Methods and Compositions <130> CIBT-P01-098 <140> 09/845025 <141> 2001-04-27 <150> 60/200765 <151> 2000-04-28 <160> 22 <170> PatentIn Ver. 2.1 <210> 1 <211> 1277 <212> DNA <213> human <220> <221> CDS <222> (1)..(1275) <400> 1 48 atg gtc gaa atg ctg ctg ttg aca aga att ctc ttg gtg ggc ttc atc Met Val Glu Met Leu Leu Leu Thr Arg Ile Leu Leu Val Gly Phe Ile tgc gct ctt tta gtc tcc tct ggg ctg act tgt gga cca ggc agg ggc 96 Cys Ala Leu Leu Val Ser Ser Gly Leu Thr Cys Gly Pro Gly Arg Gly 20 att gga aaa agg agg cac ccc aaa aag ctg acc ccg tta gcc tat aag 144 Ile Gly Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Lys 40 35 192 cag ttt att ccc aat gtg gca gag aag acc cta ggg gcc agt gga aga Gln Phe Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg 55 50 tat gaa ggg aag atc aca aga aac tcc gag aga ttt aaa gaa cta acc 240 Tyr Glu Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr 70 65 cca aat tac aac cct gac att att ttt aag gat gaa gag aac acg gga Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly 85 gct gac aga ctg atg act cag cgc tgc aag gac aag ctg aat gcc ctg Ala Asp Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu 105 100

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gag Glu 145	ggt Gly	cgc Arg	gcc Ala	gtg Val	gac Asp 150	atc Ile	acc Thr	acg Thr	tcg Ser	gat Asp 155	cgg Arg	gac Asp	cgc Arg	agc Ser	aag Lys 160	480
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cac	Leu	gag Glu	cat His	gga Gly	ggc Gly	acc Thr 215	aag Lys	ctg Leu	gtg Val	aag Lys	gac Asp 220	ctg Leu	agc Ser	cct Pro	Gly ggg	672
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gto Val	c cad	c ago s Sei	c gto r Val	c tca L Sei 325	c Leu	g cgo	g gaç g Glı	g gaq ı Glu	g gcg 1 Ala 330	ı Sei	gga Gly	a gco / Ala	tac Tyr	gcc Ala 335	c cca a Pro	1008

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ctc Leu	ctc Leu	tac Tyr	cgc Arg	atc Ile 405	ggc Gly	agc Ser	tgg Trp	gtg Val	ctg Leu 410	gat Asp	ggt Gly	gac Asp	gcg Ala	ctg Leu 415	cat His	1248
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cgg Arg	cgt Arg	tat Tyr 35	Val	cgc Arg	aag Lys	caa Gln	ctt Leu 40	Val	cct	ctg Leu	cta Leu	tac Tyr 45	Lys	cag Gln	ttt Phe	144
gtg Val	ccc Pro 50	Ser	atg Met	ccc Pro	gag Glu	cgg Arg 55	Thr	ctg Leu	ggc Gly	gcg Ala	agt Ser 60	Gly	cca Pro	gcg Ala	gag Glu	192
ggg Gly 65	Arc	gta g Val	aca Thr	agg Arg	ggg Gly 70	Ser	gag Glu	g cgc	tto Phe	cgg Arg 75	Asp	cto Leu	gta Val	ccc Pro	aac Asn 80	240

														gca Ala		288
				85					90					95		
														gcc Ala		336
														gaa Glu		384
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gta Val 225	ctg Leu	gcc Ala	gct Ala	gat Asp	gca Ala 230	gcg Ala	ggc	cga Arg	gtg Val	gta Val 235	Pro	acg Thr	cca Pro	gtg Val	ctg Leu 240	720
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gtg Val	ttc Phe 290	Ala	cgc Arg	cgc Arg	tta Leu	cgt Arg 295	Ala	ggc Gly	gac Asp	tcç Ser	gtg Val	. Leu	gct Ala	ccc Pro	ggc Gly	912

ggg Gly 305			ctc Leu													960
			gtg Val													1008
			ctc Leu 340												tgg Trp	1056
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ctg Leu	ctc Leu 370	cct Pro	ggg Gly	ggt Gly	gca Ala	gtc Val 375	cag Gln	ccg Pro	act Thr	ggc Gly	atg Met 380	cat His	tgg Trp	tac Tyr	tct Ser	1152
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		ccc Pro														288
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tca Ser	ctg Leu	gcc Ala 115	atc Ile	tct Ser	gtc Val	atg Met	aac Asn 120	cag Gln	tgg Trp	cct Pro	ggt Gly	gtg Val 125	aaa Lys	ctg Leu	cgg Arg	384
gtg Val	acc Thr 130	gaa Glu	ggc Gly	cgg Arg	gat Asp	gaa Glu 135	gat Asp	ggc Gly	cat His	cac His	tca Ser 140	gag Glu	gag Glu	tct Ser	tta Leu	432
cac His 145	tat Tyr	gag Glu	ggc Gly	cgc Arg	gcg Ala 150	gtg Val	gat Asp	atc Ile	acc Thr	acc Thr 155	tca Ser	gac Asp	cgt Arg	gac Asp	cga Arg 160	480
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gag Glu	cat His	tcg Ser 195	gcc Ala	gct Ala	gcc Ala	aag Lys	aca Thr 200	ggt Gly	ggc	tgc Cys	ttt Phe	cct Pro 205	gcc Ala	gga Gly	gcc Ala	624
cag Gln	gtg Val 210	cgc Arg	cta Leu	gag Glu	aac Asn	ggg Gly 215	gag Glu	cgt Arg	gtg Val	gcc Ala	ctg Leu 220	tca Ser	gct Ala	gta VaÌ	aag Lys	672
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cct Pro	gcc Ala	cac His 275	Leu	ctc Leu	ttc Phe	att Ile	gcg Ala 280	Asp	aat Asn	cat His	aca Thr	gaa Glu 285	Pro	gca Ala	gcc Ala	864
cac His	: ttc : Phe 290	Arg	gcc Ala	aca Thr	ttt Phe	gcc Ala 295	Ser	cat His	gtg Val	g caa Glr	cca Pro 300	Gly	caa Gln	tat Tyr	gtg Val	912

Leu Val Ser Gly 305		gc ctc cag ly Leu Gln				_	960
tcc acc cac gtg Ser Thr His Val						,,,	1008
aca ctt gtg gtg Thr Leu Val Val 340							1056
gac cac cat ctg Asp His His Leu 355							1104
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ttc cat cca ctg Phe His Pro Leu				tgaaggga	act ctaac	ccactg	1253
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	_			_		tcc Ser	_	_		-	-					240
						ttt Phe										288
	-	-		_		tgc Cys		_	_					-		336
		_		_		cct Pro				_	_					384
						cat His 135										432
_	-		-			acg Thr		_		_	_	_	_			480
						gtg Val										528
						cac His										576
	_					tgt Cys		_			-				-	624
						ctg Leu 215										672
						cag Gln										720
						gaa Glu										768
	_	_		_	-	gag Glu	_	_	_			-			_	816
						aac Asn										864

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gct gaa cgc ggc Ala Glu Arg Gly 305				
gtg acg ctg cga Val Thr Leu Arg		u Ala Gly <i>A</i>		
cac ggc acc att His Gly Thr Ile 340				
atc gag gag cac Ile Glu Glu His 355				
gcg cac gcg ctg Ala His Ala Leu 370		a Leu Ala B		
ggc ggg ggc agc Gly Gly Gly Ser 385				
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									gaa Glu 75					240
									aac Asn					288
									aac Asn					336
									cgt Arg					384
									ctc Leu					432
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									gac Asp					528
									gca Ala					576
									gct Ala					624
									aac Asn					672
_		-	_	_			_		ttc Phe 235	-	-		-	720

	aca Thr	_	_	-		_	_	_	-				_		_	768
_	caa Gln	-		_	_	_					_					816
	gtc Val		-			_	_	-				-		_		864
	gcc Ala 290	_	-	-	-	-			_		_	-	-	_	_	912
	ggt Gly															960
-	cgg Arg		_		_				-		3 2 2				_	1008
_	aga Arg		_			_		-	_			_	_			1056
	cat His	-	-				_									1104
	ctg Leu 370						_	_			_	_				1152
	agg Arg									_			_		_	1200
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aag atc tcc Lys Ile Ser 65	Arg Asn S						240
aac ccc gac Asn Pro Asp							288
ctg atg act Leu Met Thr				_		_	336
gtg atg aac Val Met Asn 115			Lys Leu				384
gac gaa gat Asp Glu Asp 130							432
gca gtg gac Ala Val Asp 145	Ile Thr T						480
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tcc aag gca Ser Lys Ala							576
gcc aaa tcg Ala Lys Ser 195	Gly Gly C		Gly Ser				624

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Gln	Gly 210	Gly	Thr	Lys	Leu	Val 215	Lys	Asp	ьeu	Ser	220	Gly	Asp	ALG	vai	
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cgt Arg	gac Asp	ggg	gac Asp	cgc Arg 325	Arg	ctc Leu	ctg Leu	ccc Pro	gcc Ala 330	Ala	gtg Val	cac	agc Ser	gtg Val 335	Thr	1008
cta Leu	agc Ser	gag Glu	gag Glu 340	Ala	gcg Ala	ggc Gly	gcc Ala	tac Tyr 345	Ala	ccg Pro	cto Leu	acg Thr	gcc Ala 350	GIN	ggc	1056
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ago Sei	ggc Gl	ggc Gly	ggg Gly	g gad Asp 405	Arg	ggg Gl	g ggc / Gl	ggc Gly	ggc Gl ₃ 410	/ Gly	c aga y Arg	a gta g Val	a gco L Ala	cta Leu 415	acc Thr	1248
gct Ala	cca Pro	a ggt o Gly	gct y Ala 420	a Ala	c gad a Asp	gct Ala	cco a Pro	g ggt o Gly 425	y Ala	g ggg a Gl	g gco y Ala	c aco	gcg Ala 430	a Gly	atc / Ile	1296

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agc gag gcc Ser Glu Ala 450	ctg cac ccg Leu His Pro	ctg ggc atg Leu Gly Met 455	gcg gtc aa Ala Val Ly 46	s Ser Ser X	nn agc 1392 Kaa Ser
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ctg ctg gtg Leu Leu Val 20	gtg ccc gcg Val Pro Ala	gca tgg gg Ala Trp Gly 25	y Cys Gly Pi	cg ggt cgg (ro Gly Arg ' 30	gtg gtg 152 Val Val
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ccc aat tac Pro Asn Tyr 85	aat cca gad Asn Pro Asp	e atc atc tt o Ile Ile Ph 90	c aag gac ga e Lys Asp G	ag gag aac lu Glu Asn 95	aca ggc 344 Thr Gly
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											cgc Arg					536
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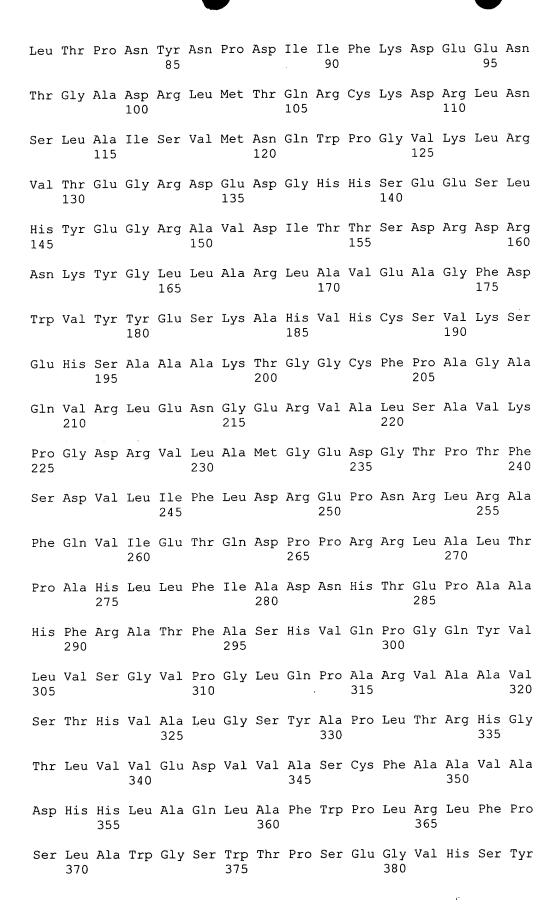
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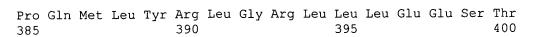
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Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn 65 70 75 80

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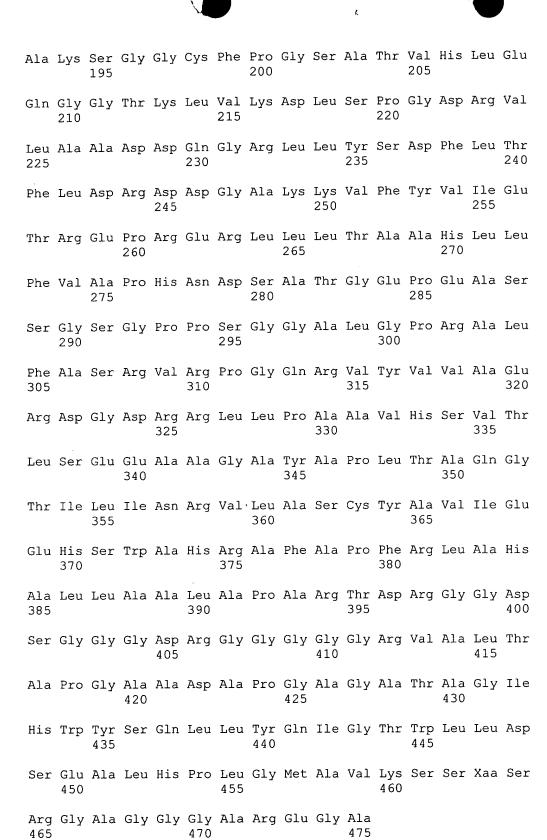
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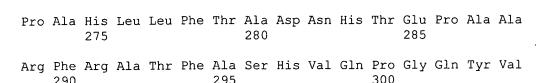
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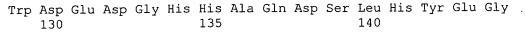
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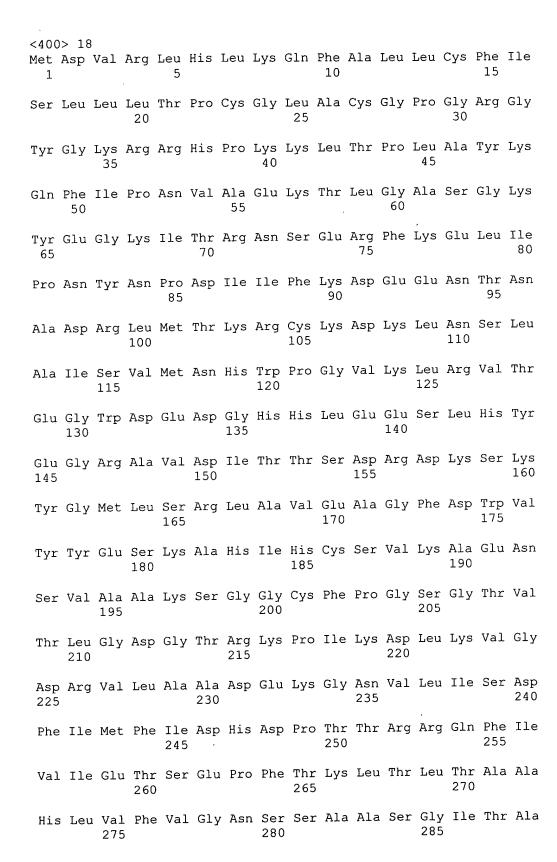
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gcc Ala 225	gtc Val	gag Glu	gct Ala	gga Gly	ttc Phe 230	gat Asp	tgg Trp	gtc Val	tcc Ser	tac Tyr 235	gtc Val	agc Ser	agg Arg	cgc Arg	cac His 240	720
		tgc Cys														768
		ttc Phe														816
		ctc Leu 275														864
		gga Gly														912





aac Asn 305	ctc Leu	gag Glu	cag Gln	atg Met	caa Gln 310	aac Asn	ttt Phe	gtg Val	cag Gln	ctg Leu 315	His	acg Thr	gac Asp	ggt Gly	gga Gly 320	960
gca Ala	gtg Val	ctc Leu	acg Thr	gtg Val 325	acg Thr	ccg Pro	gct Ala	cac His	ctg Leu 330	gtt Val	agc Ser	gtt Val	tgg Trp	cag Gln 335	ccg Pro	1008
gag Glu	agc Ser	cag Gln	aag Lys 340	ctc Leu	acg Thr	ttt Phe	gtg Val	ttt Phe 345	gcg Ala	cat His	cgc Arg	atc Ile	gag Glu 350	gag Glu	aag Lys	1056
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tat Tyr	gcg Ala	gtg Val	atc Ile	aac Asn 405	agt Ser	cag Gln	tcg Ser	ctg Leu	gcc Ala 410	cac His	tgg Trp	gga Gly	ctg Leu	gct Ala 415	ccc Pro	1248
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ttg Leu	cac His	agt Ser 435	tcg Ser	ccg Pro	aag Lys	gtg Val	gtg Val 440	agc Ser	tcg Ser	gcg Ala	cag Gln	cag Gln 445	cag Gln	aat Asn	ggc Gly	1344
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Leu Gln Ile Arg Ser Glu Leu His Leu Arg Lys Pro Ala Arg Arg Thr Gln Thr Met Arg His Ile Ala His Thr Gln Arg Cys Leu Ser Arg Leu Thr Ser Leu Val Ala Leu Leu Leu Ile Val Leu Pro Met Val Phe Ser Pro Ala His Ser Cys Gly Pro Gly Arg Gly Leu Gly Arg His Arg Ala 90 Arg Asn Leu Tyr Pro Leu Val Leu Lys Gln Thr Ile Pro Asn Leu Ser 105 Glu Tyr Thr Asn Ser Ala Ser Gly Pro Leu Glu Gly Val Ile Arg Arg Asp Ser Pro Lys Phe Lys Asp Leu Val Pro Asn Tyr Asn Arg Asp Ile Leu Phe Arg Asp Glu Glu Gly Thr Gly Ala Asp Gly Leu Met Ser Lys 155 Arg Cys Lys Glu Lys Leu Asn Val Leu Ala Tyr Ser Val Met Asn Glu 170 165 Trp Pro Gly Ile Arg Leu Leu Val Thr Glu Ser Trp Asp Glu Asp Tyr 185 His His Gly Gln Glu Ser Leu His Tyr Glu Gly Arg Ala Val Thr Ile Ala Thr Ser Asp Arg Asp Gln Ser Lys Tyr Gly Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Ser Tyr Val Ser Arg Arg His Ile Tyr Cys Ser Val Lys Ser Asp Ser Ser Ile Ser Ser His Val His 245 250 Gly Cys Phe Thr Pro Glu Ser Thr Ala Leu Leu Glu Ser Gly Val Arg 265 Lys Pro Leu Gly Glu Leu Ser Ile Gly Asp Arg Val Leu Ser Met Thr 275 Ala Asn Gly Gln Ala Val Tyr Ser Glu Val Ile Leu Phe Met Asp Arg Asn Leu Glu Gln Met Gln Asn Phe Val Gln Leu His Thr Asp Gly Gly Ala Val Leu Thr Val Thr Pro Ala His Leu Val Ser Val Trp Gln Pro 330





Glu Ser Gln Lys Leu Thr Phe Val Phe Ala His Arg Ile Glu Glu Lys 340 345 350

Asn Gln Val Leu Val Arg Asp Val Glu Thr Gly Glu Leu Arg Pro Gln 355 360 365

Arg Val Val Lys Leu Gly Ser Val Arg Ser Lys Gly Val Val Ala Pro 370 375 380

Leu Thr Arg Glu Gly Thr Ile Val Val Asn Ser Val Ala Ala Ser Cys 385 390 395 400

Tyr Ala Val Ile Asn Ser Gln Ser Leu Ala His Trp Gly Leu Ala Pro 405 410 415

Met Arg Leu Leu Ser Thr Leu Glu Ala Trp Leu Pro Ala Lys Glu Gln
420 425 430

Leu His Ser Ser Pro Lys Val Val Ser Ser Ala Gln Gln Gln Asn Gly
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Ile His Trp Tyr Ala Asn Ala Leu Tyr Lys Val Lys Asp Tyr Val Leu 450 455 460

Pro Gln Ser Trp Arg His Asp 465 470

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Leu Gly Ala Ser Gly Arg Tyr Glu Gly Lys Ile Xaa Arg Asn Ser Glu 35 40 45

Arg Phe Lys Glu Leu Thr Pro Asn Tyr Asn Pro Asp Ile Ile Phe Lys 50 55 60

Asp Glu Glu Asn Thr Gly Ala Asp Arg Leu Met Thr Gln Arg Cys Lys 65 70 75 80

Asp Lys Leu Asn Xaa Leu Ala Ile Ser Val Met Asn Xaa Trp Pro Gly

Val Xaa Leu Arg Val Thr Glu Gly Trp Asp Glu Asp Gly His His Xaa 100 105 110

Glu Glu Ser Leu His Tyr Glu Gly Arg Ala Val Asp Ile Thr Thr Ser 115 120 125



Asp Arg Asp Xaa Ser Lys Tyr Gly Xaa Leu Xaa Arg Leu Ala Val Glu 130 135 140

Ala Gly Phe Asp Trp Val Tyr Tyr Glu Ser Lys Ala His Ile His Cys 145 150 155 160

Ser Val Lys Ala Glu Asn Ser Val Ala Ala Lys Ser Gly Gly Cys Phe 165 170 175

Pro Gly Ser Ala Xaa Val Xaa Leu Xaa Xaa Gly Gly Xaa Lys Xaa Val 180 185 190

Lys Asp Leu Xaa Pro Gly Asp Xaa Val Leu Ala Ala Asp Xaa Xaa Gly 195 200 205

Xaa Leu Xaa Xaa Ser Asp Phe Xaa Xaa Phe Xaa Asp Arg 210 215 220

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Xaa Thr Leu Gly Ala Ser Gly Xaa Xaa Glu Gly Xaa Xaa Xaa Arg Xaa 35 40 45

Ser Glu Arg Phe Xaa Xaa Leu Thr Pro Asn Tyr Asn Pro Asp Ile Ile 50 55 60

Phe Lys Asp Glu Glu Asn Xaa Gly Ala Asp Arg Leu Met Thr Xaa Arg 65 70 75 80

Cys Lys Xaa Xaa Xaa Asn Xaa Leu Ala Ile Ser Val Met Asn Xaa Trp 85 90 95

Pro Gly Val Xaa Leu Arg Val Thr Glu Gly Xaa Asp Glu Asp Gly His
100 105 110

His Xaa Xaa Xaa Ser Leu His Tyr Glu Gly Arg Ala Xaa Asp Ile Thr 115 120 125

Thr Ser Asp Arg Asp Xaa Xaa Lys Tyr Gly Xaa Leu Xaa Arg Leu Ala 130 135 140

His Xaa Ser Val Lys Xaa Xaa · 165